

Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (currently amended): A spray powder for the manufacture of a thermally insulating layer produced on a substrate by means of a thermal spraying process, wherein the substrate has already been coated with a single- or multi-layer part coating, and wherein at least one thermally insulating functional material is used, which on the one hand has a lower thermal conductivity than the substrate and on the other hand forms a chemically and thermally stable phase at elevated temperatures, characterized in that the spray powder comprises particles which have an agglomerated microstructure formed by a plurality of granules adhering to each other, the granules being made of the at least one functional material, and at least one further component made of an additive or a plurality of additives, the further component being distributed finely dispersed on surfaces of the functional material granules, the further component exerting a retarding or eliminating effect with regard to sintering compounds which form between the functional material granules, wherein surfaces of the granules comprise micro-pores that produce low mass boundary zones where the granules contact each other.

Claim 2 (previously presented): A spray powder in accordance with claim 1, characterized in that, in relation to all the components, the component which is formed from the additive or the additives has a proportion of not more than 5 mol %, in that the functional material granules have an average diameter d_{50} greater than 1 nm and smaller than 10 μm and that the particles of the spray powder have an average diameter d_{50} in the range of 1 μm to 100 μm .

Claim 3 (previously presented): A spray powder in accordance with claim 1, characterized in that the additive or the additives are deposited between the functional material granules of the particle in a phase comprising metal salts, wherein these salts can be transformed thermally into metal oxides, so that the additive only takes on the effective form, which

influences the sintering compounds after a transformation of the salts by means of a thermal treatment step.

Claim 4 (previously presented): A spray powder in accordance with claim 1, characterized in that the particles contain communicating pore spaces open against an outer surface of the particle and the additive or the additives are deposited in the pore spaces and also on the outer surface.

Claim 5 (previously presented): A spray powder in accordance with claim 1, characterized in that the functional material granules comprise one or more of the following materials:

- zirconium oxide, in particular stabilized zirconium oxide YSZ;
- a ceramic material such as lanthanum zirconate, which has a pyrochloiric structure $A_2B_2O_7$, wherein A and B are present in a cationic form A^{n+} and B^{m+} , respectively with value pairs $n, m = 3, 4$, or $2, 5$ applying to their charges $n+$ and $m+$, the formula for the pyrochloiric structure generally being $A_{2-x}B_{2+x}O_{7-y}$, and the following chemical elements can be selected as A and B:

$A = \text{La, Ce, Pr, Nd, Sm, Eu, Gd, Tb, Dy, Ho, Er, Tm, Yb}$ or a mixture of these elements and $B = \text{Zr, Hf, Ti}$;

- a magneto plumbite phase $MMeAl_{11}O_{19}$,
with $M = \text{La, Nd}$ and $Me = \text{Mg, Zn, Co, Mn, Fe, Ni, Cr}$;

while the additive or the additives comprise at least one of Al-, Mg-, and/or La-oxide, yttrium aluminum oxide or a spinel.

Claim 6 (previously presented): A spray powder in accordance with claim 1, characterized in that each additive or the transformed form of this which can effectively influence the sintering process is not miscible with the functional material, so that diffusion into the functional material is substantially avoided.

Claim 7 (currently amended): A method for the manufacture of a spray powder having particles which have an agglomerated microstructure formed by a plurality of granules

adhering to each other, the granules being made of the at least one functional material, and at least one further component made of an additive or a plurality of additives, the further component being distributed finely dispersed on surfaces of the functional material granules, the further component exerting a retarding or eliminating effect with regard to sintering compounds which form between the functional material granules, the method ~~being characterized in that~~ comprising forming micro-pores on surfaces of the granules to produce low mass boundary zones where the granules contact each other, and wherein

A1) at least one of the additives is introduced into a porous agglomerate of the functional material granules by means of an impregnating process or [[that]]

A2) agglomerates are manufactured from a mixture of the functional material granules and the finely dispersed additive or a homogenous or colloidal solution of the additive.

Claim 8 (previously presented): A method in accordance with claim 7, characterized in that, in a first step, the additives are added to the agglomerated microstructure in the form of a metal salt solution or are mixed with the granules, whereby the salts can be transformed thermally into metal oxides, in a second step the mixture is dried, and in a third step the salts are transformed by means of a thermal treatment into a form which influences the sintering process effectively.

Claim 9 (previously presented): A method in accordance with claim 7, characterized in that, in a concluding step, the particles are melted in a plasma flame.

Claim 10 (currently amended): A coated substrate comprising a thermally insulating layer manufactured from a spray powder comprising particles which have an agglomerated microstructure formed by a plurality of granules adhering to each other, the granules being made of the at least one functional material, and at least one further component made of an additive or a plurality of additives, the further component being distributed finely dispersed on surfaces of the functional material granules, the further component exerting a retarding or eliminating effect with regard to sintering compounds which form between the functional material granules, wherein surfaces of the granules comprise micro-pores that produce low mass boundary zones where the granules contact each other.

Claim 11 (previously presented): A spray powder according to claim 1, wherein the further component is finely dispersed in boundary zones of the surfaces.

Claim 12 (previously presented): A spray powder according to claim 2, wherein the component which is formed from the additive or the additives has a proportion of at most 3 mol %.

Claim 13 (previously presented): A spray powder according to claim 5, wherein the spinel comprises magnesium aluminum oxide.

Claim 14 (previously presented): A method according to claim 7, wherein the agglomerates are produced by spray drying a slurry and subsequent calcining.

Claim 15 (currently amended): A spray powder for the manufacture of a thermally insulating layer on a substrate comprising a plurality of agglomerated granules which adhere to each other to form particles and which are made of at least one functional material and at least one component comprising at least one additive, the component being dispersed over surfaces of the granules and retarding the formation of sintering compounds between the granules, wherein surfaces of the granules comprise micro-pores that produce low mass boundary zones where the granules contact each other.